

### **LISTING OF CLAIMS:**

Claims 1 and 2 (Previously cancelled)

Claim 3 (Currently amended): ~~The~~ A surface-modified, pyrogenically produced oxides doped by aerosol, characterized in that the oxides are selected from the group consisting of  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{TiO}_2$ ,  $\text{B}_2\text{O}_3$ ,  $\text{ZrO}_2$ ,  $\text{In}_2\text{O}_3$ ,  $\text{ZnO}$ ,  $\text{Fe}_2\text{O}_3$ ,  $\text{Nb}_2\text{O}_5$ ,  $\text{V}_2\text{O}_5$ ,  $\text{WO}_3$ ,  $\text{SnO}_2$  and  $\text{GeO}_2$ , wherein the surface- is modified with one or several compounds selected from the following groups:

a) Organosilanes having either formula  $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$  or  $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n-1})$ , wherein

R = alkyl, and

n = 1 – 20;

b) Organosilanes having either formula  $\text{R}'_x(\text{RO})_y\text{Si}(\text{C}_n\text{H}_{2n+1})$  or  $(\text{RO})_3\text{Si}(\text{C}_n\text{H}_{2n+1})$ ,

wherein

R = alkyl,

R' = alkyl,

R' = cycloalkyl

n = 1 – 20,

x+y = 3,

x = 1, or 2, and

y = 1, or 2;

c) Halogen organosilanes having either formula  $X_3 Si(C_nH_{2n+1})$  or  $X_3 Si(C_nH_{2n-1})$ ,  
wherein

$X = Cl, \text{ or } Br, \text{ and}$

$n = 1 - 20;$

d) Halogen organosilanes having either formula  $X_2 (R') Si(C_nH_{2n+1})$  or

$X_2 (R') Si(C_nH_{2n-1})$ , wherein

$X = Cl, \text{ or } Br$

$R' = \text{alkyl and or cycloalkyl, and}$

$n = 1 - 20;$

e) Halogen organosilanes having formula  $X (R')_2 Si(C_nH_{2n+1})$  or

$X (R')_2 Si(C_nH_{2n-1})$ , wherein

$X = Cl, \text{ or } Br;$

$R' = \text{alkyl or and cycloalkyl, and}$

$n = 1 - 20;$

f) Organosilanes having the formula  $(RO)_3Si(CH_2)_m-R'$

$R = \text{alkyl,}$

$m = 0, \text{ or } 1-20, \text{ and}$

$R' = \text{methyl-, aryl-, } -C_6H_5, \text{ substituted phenyl groups,}$

$-C_4F_9$ ,  $OCF_2-CHF-CF_3$ ,  $-C_6F_{13}$ ,  $-O-CF_2-CHF_2$ ,  
 $-NH_2$ ,  $=N_3$ ,  $-SCN$ ,  $-CH=CH_2$ ,  $-NH-CH_2-CH_2-NH_2$ ,  
 $-N-(CH_2-CH_2-CH_2NH_2)_2$ ,  
 $-OOC(CH_3)C=CH_2$ ,  
 $-OCH_2-CH(O)CH_2$ ,  
 $-NH-CO-N-CO-(CH_2)_5$ ,  
 $-NH-COO-CH_3$ ,  $-NH-COO-CH_2-CH_3$ ,  $-NH-(CH_2)_3Si(OR)_3$ ,  
 ~~$-S_x-(CH_2)_3Si(OR)_3$ , where x is 0, one or more,~~  
 $-SH$ , or  
 $-NR'R''R'''$ , wherein  $R'$  = alkyl, or aryl;  $R''$  = H, alkyl, aryl; and  $R'''$  = H, alkyl, aryl,  
 benzyl, or  $C_2H_4N(R'''' )_2$ , wherein  $R''''$  = H, or alkyl;

g) Organosilanes having the formula  $(R'')_x(RO)_ySi(CH_2)_m-R'$ , wherein

$R''$  = alkyl, or cycloalkyl,

$x+y=2$ ,

$x=1$ , or  $2$ ,

$y=1$ , or  $2$ ,

$m=0$ , or  $1$  to  $20$ , and

$R'$  = methyl-, aryl,  $-C_6H_5$ , substituted phenyl groups,

$-C_4F_9$ ,  $-OCF_2-CHF-CF_3$ ,  $-C_6F_{13}$ ,  $-O-CF_2-CHF_2$ ,

$-NH_2$ ,  $-N_3$ ,  $SCN$ ,  $-CH=CH_2$ ,  $-NH-CH_2-CH_2-NH_2$ ,

$-N-(CH_2-CH_2-NH_2)_2$ ,

-OOC (CH<sub>3</sub>)C = CH<sub>2</sub>,

-OCH<sub>2</sub>-CH(O) CH<sub>2</sub>,

-NH-CO-N-CO-(CH<sub>2</sub>)<sub>5</sub>,

-NH-COO-CH<sub>3</sub>, -NH-COO-CH<sub>2</sub>-CH<sub>3</sub>, -NH-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>,

~~-S<sub>x</sub>-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>, where x is 0, one or more,~~ or -SH , or

-NR'R''R''', wherein R' = alkyl, or aryl; R'' = H,

alkyl, or aryl; and R''' = H, alkyl, aryl, benzyl, or

C<sub>2</sub>H<sub>4</sub>N(R''')<sub>2</sub>, wherein R''' = H, or alkyl ;

h) Halogen organosilanes having the formula X<sub>3</sub>Si (CH<sub>2</sub>)<sub>m</sub>-R', wherein

X = Cl, or Br,

m = 0, 1 – 20,

R' = methyl-, aryl, -C<sub>6</sub>H<sub>5</sub>, substituted phenyl groups

-C<sub>4</sub>F<sub>9</sub>, -OCF<sub>2</sub>-CHF-CF<sub>3</sub>, -C<sub>6</sub>F<sub>13</sub>, -O-CF<sub>2</sub>-CHF<sub>2</sub>,

-NH<sub>2</sub>, -N<sub>3</sub>, SCN, -CH=CH<sub>2</sub>, -NH-CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>,

-N-(CH<sub>2</sub>-CH<sub>2</sub>-NH<sub>2</sub>)<sub>2</sub>,

-OOC (CH<sub>3</sub>)C = CH<sub>2</sub>,

-OCH<sub>2</sub>-CH(O) CH<sub>2</sub>,

-NH-CO-N-CO-(CH<sub>2</sub>)<sub>5</sub>,

-NH-COO-CH<sub>3</sub>, -NH-COO-CH<sub>2</sub>-CH<sub>3</sub>, -NH-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>,

~~-S<sub>x</sub>-(CH<sub>2</sub>)<sub>3</sub>Si(OR)<sub>3</sub>, where x is 0, one or more,~~ or

-SH;

i) Halogen organosilanes having the formula  $(R)X_2Si(CH_2)_m-R'$ , wherein

$X = Cl, \text{ or } Br,$

$R = \text{alkyl such as methyl-, ethyl-, or propyl-},$

$m = 0, \text{ or } 1 - 20, \text{ and}$

$R' = \text{methyl-, aryl-, } -C_6H_5, \text{ substituted phenyl groups,}$

$-C_4F_9, -OCF_2-CHF-CF_3, -C_6F_{13}, -O-CF_2-CHF_2,$

$-NH_2, -N_3, SCN, -CH=CH_2, -NH-CH_2-CH_2-NH_2,$

$-N-(CH_2-CH_2-NH_2)_2,$

$-OOC(CH_3)C=CH_2,$

$-OCH_2-CH(O)CH_2,$

$-NH-CO-N-CO-(CH_2)_5,$

$-NH-COO-CH_3; -NH-COO-CH_2-CH_3,$

$-NH-(CH_2)_3Si(OR)_3,$

~~$-S_x-(CH_2)_3Si(OR)_3,$  where  $x$  is 0, one or more, or~~

$-SH;$

(j) Halogen organosilanes having the formula  $(R)_2X Si(CH_2)_m-R'$ , wherein

$X = Cl, \text{ or } Br,$

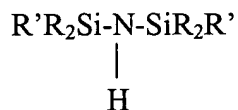
$R = \text{alkyl},$

$m = 0, \text{ or } 1 - 20, \text{ and}$

$R' = \text{methyl-, aryl-, } -C_6H_5, \text{ substituted phenyl groups,}$

$-\text{C}_4\text{F}_9$ ,  $-\text{OCF}_2\text{-CHF-CF}_3$ ,  $-\text{C}_6\text{F}_{13}$ ,  $-\text{O-CF}_2\text{-CHF}_2$ ,  
 $-\text{NH}_2$ ,  $-\text{N}_3$ ,  $\text{SCN}$ ,  $-\text{CH=CH}_2$ ,  $-\text{NH-CH}_2\text{-CH}_2\text{-NH}_2$ ,  
 $-\text{N-(CH}_2\text{-CH}_2\text{-NH}_2)_2$ ,  
 $-\text{OOC (CH}_3\text{)C = CH}_2$ ,  
 $-\text{OCH}_2\text{-CH(O) CH}_2$ ,  
 $-\text{NH-CO-N-CO-(CH}_2)_5$ ,  
 $-\text{NH-COO-CH}_3$ ,  $-\text{NH-COO-CH}_2\text{-CH}_3$ ,  $-\text{NH-(CH}_2)_3\text{Si(OR)}_3$ ,  
 ~~$-\text{S}_x\text{-(CH}_2)_3\text{Si(OR)}_3$ , where x is 0, one or more, or~~  
 $-\text{SH}$ ;

(k) Silazanes having the formula

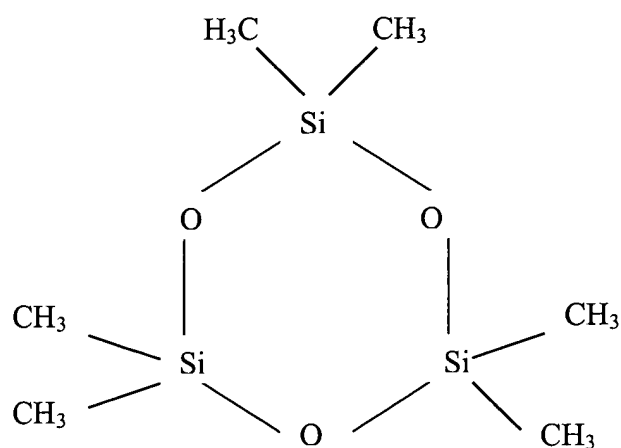


wherein R = alkyl, and

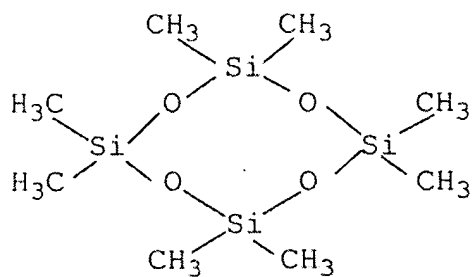
R' = alkyl, or vinyl; or

(l) Cyclic polysiloxanes D 3, D 4 or D 5,

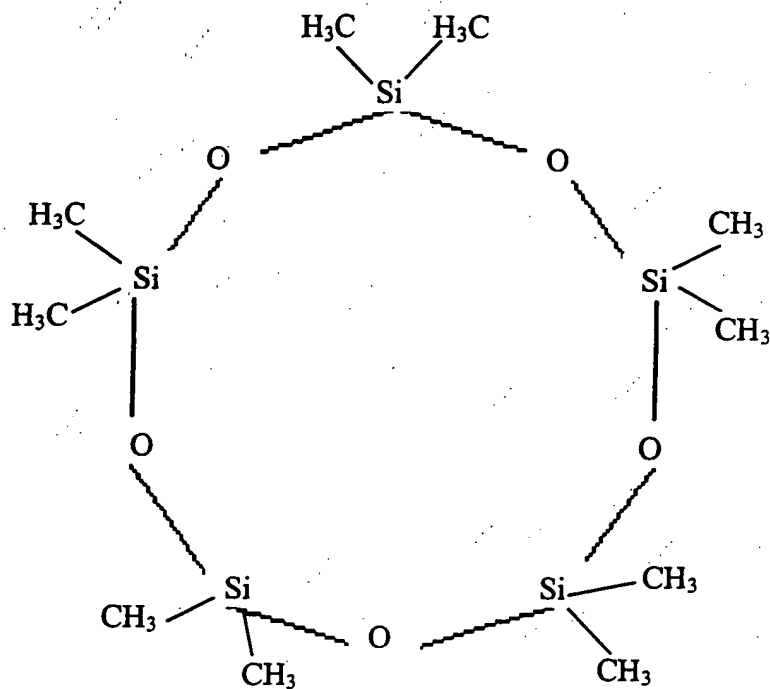
where 1) D3 has the formula:



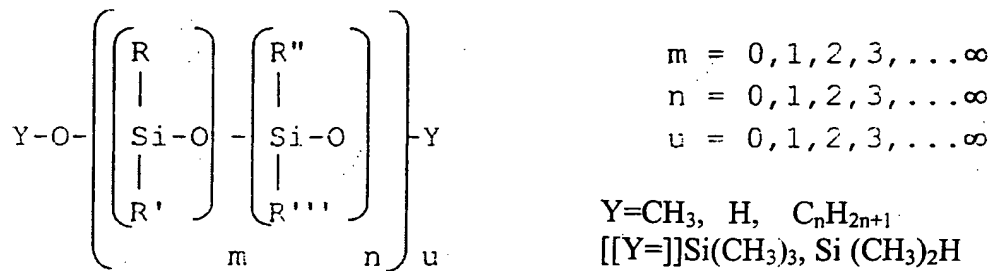
2) D4 has the formula:



and 3) D5 has the formula:



m) Polysiloxanes or silicone oils having any one of the formula



,  $Si(CH_3)_2OH$ ,  $Si(CH_3)_2(OCH_3)$ , or

$Si(CH_3)_2(C_nH_{2n+1})$ , wherein  $n=1-20$ ,



wherein,

R = alkyl, aryl,  $(\text{CH}_2)_n\text{-NH}_2$ , or H,

R' = alkyl, aryl,  $(\text{CH}_2)_n\text{-NH}_2$ , or H,

R'' = alkyl, aryl,  $(\text{CH}_2)_n\text{-NH}_2$ , or H,

R''' = alkyl, aryl,  $(\text{CH}_2)_n\text{-NH}_2$ , or H.

Claim 4 (Previously presented): A method of producing the surface-modified oxides in accordance with claim 3, comprising placing pyrogenically produced oxides doped by aerosol in a suitable mixing container, spraying the oxides under intensive mixing with the surface-modification reagent or a mixture of several surface-modification reagents.

Claim 5 (Previously presented): In a reinforcing filler composition wherein the improvement comprises the surface-modified oxides according to claim 3 as reinforcing filler.

Claim 6 (Original) The method of claim 4 wherein the spraying step includes spraying with water and/or acid prior to the spraying with the surface-modification reagent or a mixture of several surface-modification reagents.

Claim 7 (Original) The method of claim 4 further comprising re-mixing at 15 to 30 minutes and tempering at a temperature of 100 to 400 °C for a period of 1 to 6 hours.

Claim 8 (Previously presented) The surface-modified, pyrogenically produced oxides according to claim 3 wherein the cyclic polysiloxanes is D 4.

Claim 9 (Cancelled)